AMENDMENTS TO THE SPECIFICATION

Please amend the Specification as indicated in the replacement paragraphs below:

Please amend the paragraph at page 3, line 21, as follows:

SGETEDTFIADLVVGLCTGQIKTGAPCR (SEQ ID NO: 2) ~~(Seq. ID No. 1)~~

Please amend the paragraph at page 3, line 29 to page 4 line 2, as follows:

Further analysis of one of the synthesized highly active peptides (SEQ ID NO: 3) ~~(Seq. ID No. 2)~~ showed that this peptide forms a ring via two cysteins and a dimer via the remaining free cystein. The peptide in this form is most active in its ability to bind SDA.

Please amend the paragraphs at page 4, line 9 to page 5, line 23, as follows:

The invention further provides a peptide capable of binding antibodies that are found in elevated levels in body fluids of schizophrenic patients, wherein the peptide binds antibodies that are capable of specific binding to a peptide having the following amino acid sequence:

LVVGLCTCQIKTGPAC (SEQ ID NO: 3) ~~(Seq. I.D. No. 2)~~.

Several non-limiting examples of such peptides are the following:

iii. IADLVVGLCTGQIKTGAPCR (SEQ ID NO: 4) ~~(Seq. I.D. No. 3)~~

iv. ADLVVGLCTGQIKTGAPCR (SEQ ID NO: 5) ~~(Seq. I.D. No. 4)~~

v. DLVVGLCTGQIKTGAPCR (SEQ ID NO: 6) ~~(Seq. I.D. No. 5)~~

vi. LVVGLCTGQIKTGAPCR (SEQ ID NO: 7) ~~(Seq. I.D. No. 6)~~

vii. LVVGLCTGQIKTGPACR (SEQ ID NO: 8) ~~(Seq. I.D. No. 7)~~

viii. LVVGLCTPQIKTGPACR (SEQ ID NO: 9) ~~(Seq. I.D. No. 8)~~

The invention also provides a peptide which is capable of binding antibodies that are found in elevated levels in body fluids of schizophrenic patients, such peptides capable of binding antibodies which do not bind to peptides selected from the group consisting of:

i. SGETEDTFIADLVVGLCTGQ (SEQ ID NO: 10) ~~(Seq. I.D. No. 9)~~

ii. VVGLCTGQIKTGAPCR (SEQ ID NO: 11) ~~(Seq. I.D. No. 10)~~

iii. CTGQIKTGAPCR (SEQ ID NO: 12) ~~(Seq. I.D. No. 11)~~

iv. LVVGLCTGQIKTGAPC (SEQ ID NO: 13) ~~(Seq. ID. No. 12)~~

v. LVVGLCTGQIKTGAP (SEQ ID NO: 14) ~~(Seq. ID. No. 13)~~

vi. LVVGLCTGQIKTGPAC (SEQ ID NO: 15) ~~(Seq. ID. No. 14)~~

The invention also provides a peptide capable of binding to antibodies that are found in elevated levels in body fluids of schizophrenic patients comprising an amino acid sequence selected from the group, consisting of:

i. SGETEDTFIADLVVGLCTGQIKTGAPCR (SEQ ID NO: 2) ~~(Seq. I.D. No.~~

~~1)~~

ii. LVVGLCTCQIKTGPAC (SEQ ID NO: 3) ~~(Seq. I.D. No. 2)~~

iii. IADLVVGLCTGQIKTGAPCR (SEQ ID NO: 4) ~~(Seq. I.D. No. 3)~~

iv. ADLVVGLCTGQIKTGAPCR (SEQ ID NO: 5) ~~(Seq. I.D. No. 4)~~

v. DLVVGLCTGQIKTGAPCR (SEQ ID NO: 6) ~~(Seq. I.D. No. 5)~~

vi. LVVGLCTGQIKTGAPCR (SEQ ID NO: 7) ~~(Seq. I.D. No. 6)~~

vii. LVVGLCTGQIKTGPACR (SEQ ID NO: 8) ~~(Seq. I.D. No. 7)~~

viii. LVVGLCTPQIKTGPACR (SEQ ID NO: 9) ~~(Seq. I.D. No. 8)~~

By a preferred embodiment the invention provides a peptide capable of binding antibodies that are found in elevated levels in body fluids of schizophrenic patients selected from the group consisting of:

i. SGETEDTFIADLVVGLCTGQIKTGAPCR (SEQ ID NO: 2) ~~(Seq. I.D. No. 1)~~

ii. LVVGLCTCQIKTGPAC (SEQ ID NO: 3) ~~(Seq. I.D. No. 2)~~

iii. IADLVVGLCTGQIKTGAPCR (SEQ ID NO: 4) ~~(Seq. I.D. No. 3)~~

iv. ADLVVGLCTGQIKTGAPCR (SEQ ID NO: 5) ~~(Seq. I.D. No. 4)~~

v. DLVVGLCTGQIKTGAPCR (SEQ ID NO: 6) ~~(Seq. I.D. No. 5)~~

vi. LVVGLCTGQIKTGAPCR (SEQ ID NO: 7) ~~(Seq. I.D. No. 6)~~

vii. LVVGLCTGQIKTGPACR (SEQ ID NO: 8) ~~(Seq. I.D. No. 7)~~

viii. LVVGLCTPQIKTGPACR (SEQ ID NO: 9) ~~(Seq. I.D. No. 8)~~

Please amend the paragraphs at page 9, line 11 to page 10, line 2, as follows:

By a further embodiment the peptide of step (b) above is a peptide which binds antibodies that are capable of specific binding to a peptide having the amino acid sequence of SEQ ID NO: 3 ~~Seq. ID. No. 2~~. By another embodiment the peptide in step (b) above comprises an a. a. sequence selected from the group consisting of:

i. SGETEDTFIADLVVGLCTGQIKTGAPCR (SEQ ID NO: 2) ~~(Seq. I.D. No. 1)~~

ii. LVVGLCTCQIKTGPAC (SEQ ID NO: 3) ~~(Seq. I.D. No. 2)~~

iii. IADLVVGLCTGQIKTGAPCR (SEQ ID NO: 4) ~~(Seq. I.D. No. 3)~~

iv. ADLVVGLCTGQIKTGAPCR (SEQ ID NO: 5) ~~(Seq. I.D. No. 4)~~

v. DLVVGLCTGQIKTGAPCR (SEQ ID NO: 6) ~~(Seq. I.D. No. 5)~~

vi. LVVGLCTGQIKTGAPCR (SEQ ID NO: 7) ~~(Seq. I.D. No. 6)~~

vii. LVVGLCTGQIKTGPACR (SEQ ID NO: 8) ~~(Seq. I.D. No. 7)~~

viii. LVVGLCTPQIKTGPACR (SEQ ID NO: 9) ~~(Seq. I.D. No. 8)~~

By a preferred embodiment, the peptide in step (b) is a peptide selected from the group consisting of:

i. SGETEDTFIADLVVGLCTGQIKTGAPCR (SEQ ID NO: 2) ~~(Seq. I.D. No. 1)~~

ii. LVVGLCTCQIKTGPAC (SEQ ID NO: 3) ~~(Seq. I.D. No. 2)~~

iii. IADLVVGLCTGQIKTGAPCR (SEQ ID NO: 4) ~~(Seq. I.D. No. 3)~~

iv. ADLVVGLCTGQIKTGAPCR (SEQ ID NO: 5) ~~(Seq. I.D. No. 4)~~

v. DLVVGLCTGQIKTGAPCR (SEQ ID NO: 6) ~~(Seq. I.D. No. 5)~~

vi. LVVGLCTGQIKTGAPCR (SEQ ID NO: 7) ~~(Seq. I.D. No. 6)~~

vii. LVVGLCTGQIKTGPACR (SEQ ID NO: 8) ~~(Seq. I.D. No. 7)~~

Please amend the paragraphs at page 10, lines 17-24, as follows:

Fig. 1A is a graphical representation showing binding activity of the Peptide I4 having SEQ ID NO: 3 ~~SEQ ID NO: 2~~ to PAAs prepared from samples obtained from schizophrenic patients. The peptide having SEQ ID NO: 10 ~~SEQ ID NO: 9~~ was used as a negative control.

Fig. 1B is a graphical representation showing binding activity of the Peptide I4 having SEQ ID NO: 3 ~~SEQ ID NO: 2~~ to PAAs prepared from samples obtained from non-schizophrenic individuals. The peptide having SEQ ID NO: 10 ~~SEQ ID NO: 9~~ was used as a negative control.

Fig. 2A is a graphical representation showing binding activity of peptide I4 (SEQ ID NO: 3) ~~(SEQ ID NO: 2)~~ to plasma samples obtained from schizophrenic patients. The peptide having SEQ ID NO: 10 ~~SEQ ID NO: 9~~ was used as a negative control.

Fig. 2B is a graphical representation showing binding activity of peptide I4 (SEQ ID NO: 3) ~~(SEQ ID NO: 2)~~ to plasma samples obtained from non-schizophrenic individuals. The peptide having SEQ ID NO: 10 ~~SEQ ID NO: 9~~ was used as a negative control.

Please amend the paragraph at page 16, lines 10-15, as follows:

Only the enzymatic digest of the Enolase revealed one peptide which was immunologically active (amino acids 372-399; The peptide

having SEQ ID NO: 2 ~~(Seq. I.D. No. 1)~~ in the following Table 2), i.e. was capable of binding SDAs to a higher extent and its capability of binding to NSDAs.

Please amend Table 2 and the paragraphs following at page 18, line 1 to page 19, line 2, as follows:

Table 2

Peptide		Seq. I.D. No.	Activity
SGETEDTFIADLVVGLCTGQIKTGAPCR	(28aa)	2 [[1]]	YES
LVVGLCTCQUKTGPAC	(17aa)	3 [[2]]	YES
IADLVVGLCTGQIKTGAPCR	(20aa)	4 [[3]]	YES
ADLVVGLCTGQIKTGAPCR	(19aa)	5 [[4]]	YES
DLVVGLCTGQIKTGAPCR	(18aa)	6 [[5]]	YES
LVVGLCTGQIKTGAPCR	(17aa)	7 [[6]]	YES
LVVGLCTGQUKTGPACR	(17aa)	8 [[7]]	YES
LVVGLCTPQUKTGPACR	(17aa)	9 [[8]]	YES
SGETEDTFIADLVVGLCTGQ	(20aa)	10 [[9]]	No
WGLCTGQIKTGAPCR	(16aa)	11 [[10]]	No
CTGQIKTGAPCR	(12aa)	12 [[11]]	No
LVVGLCTGQIKTGAPC	(16aa)	13 [[12]]	No
LVVGLCTGQIKTGAP	(15aa)	14 [[13]]	No
LVVGLCTGQIKTGPAC	(16aa)	15 [[14]]	No

Of the synthesized peptides, Peptide SEQ ID NO: 3 ~~Seq. I.D. No. 2~~ was most capable of binding to antibodies found in high levels in schizophrenic patients.

EXAMPLE 3: Characterization of Peptide SEQ ID NO: 3 ~~Seq. I.D. No. 2~~

Laser desorption mass spectroscopy of Peptide SEQ ID NO: 3 ~~Seq. I.D. No. 2~~ (comprising three cysteins) directly after synthesis shows the presence of a monomer without a ring formation via the cysteins. However, after dissolving the peptide (about 4 mg) in 1 ml water/DMF/DMSO (1:1:1;v:v:v) and leaving the solution overnight at room temperature, the peptide forms a ring via two cysteins and a dimer via the remaining free cystein. No higher polymers could be detected. When testing the binding activity of the two forms of the peptide to SDA, it became clear that the dimer form of the peptide was much more active in binding SDAs than the non-dimer form.

Please amend the paragraphs at page 19, lines 7-21, as follows:

EXAMPLE 4: Binding activity of Peptide SEQ ID NO: 3 ~~Seq. I.D. No. 2~~ to samples from schizophrenic and non-schizophrenic individuals:

The binding activity of Peptide 14 (SEQ ID NO: 3) ~~(Seq. I.D. No. 2)~~ to isolated PAAs was tested using the method described above. As seen in Fig. 1A, the above peptide positively bound seven out of eight PAAs obtained from different schizophrenic patients. Fig. 1B shows that the above peptide did not bind PAAs obtained

from eight different non-schizophrenic individuals. Peptide SEQ ID NO: 10 ~~Seq. I.D. No. 9~~ was used as a negative control.

The capability of Peptide 14 (SEQ ID NO: 3) ~~(Seq. I.D. No. 2)~~ to bind SDA in plasma samples obtained from schizophrenic patients was then tested. As seen in Fig. 2A, this peptide positively bound four out of five SDA from different schizophrenic patients. Fig. 2B shows that the above peptide did not bind NSDA from fourteen out of fifteen different non-schizophrenic individuals. Peptide 14 (SEQ ID NO: 10) ~~(Seq. I.D. No. 9)~~ was used as a negative control.